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ABSTRACT

This paper offers a brief outline of the training curriculum developed by the National Association for Search and Rescue (NASAR) for its Wilderness Medicine Programs. The training modules are designed for wilderness search and rescue units, rural emergency medical services (EMS) squads, military medics, backcountry rangers, epedition leaders, outdoor instructors, and others who provide emergency care in remote areas. NASAR's Wilderness Emergency Medical Training (WEMT) series and its Wilderness First Responder (WFR) program provide an effective solution to the past problems of wilderness EMS. The NASAR programs are continuing education modules. Wilderness emergency treatment requires modification of concentrated procedures and techniques that have been developed for the rapid-transport ambulance context. Course content and design were developed from prototype programs operated since 1984. Specific course components include such areas as backcountry medicine, wilderness rescue, equipment, wilderness toxins, and trauma. Certification, prerequisites, and supplemental programs are described for both the WEMT and WFR. Certification is provided by NASAR, which works with individual state EMS agencies to develop appropriate mechanisms to authorize EMS providers to utilize wilderness procedures and techniques. (TES)

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EMERGENCY MEDICAL TREATMENT FOR THE "WILDERNESS" CONTEXT

Emergency medical treatment usually takes place in an "ambulance context" that assumes rapid transport to hospital-level facilities. The U.S. Department of Transportation (DOT) and the Emergency Medical Services system (EMS) have effectively defined standards of practice, a curriculum for training and a system of certification and supervision of emergency providers working in the ambulance context.

Special problems are faced by wilderness search and rescue units, rural EMS squads, military medics, backcountry rangers, expedition leaders, outdoor instructors and others who frequently provide emergency care in remote areas. Prolonged transport times, severe environments and the need to rely on portable and often improvised equipment require some modification of conventional emergency treatment. This creates the need for new clinical guidelines, new training programs and new certification and authorization of providers working in a specialized **wilderness context of delayed / prolonged transport , severe environments and portable improvised equipment.**

AN EFFECTIVE SOLUTION

Currently, a gap in the health care system exists for prolonged transport EMS. Present DOT training programs are based on the "golden hour" concept and concentrate their emphasis entirely on management during short transport of the patient to the hospital emergency room. The EMT confronted with extended patient management during a prolonged or delayed transport has minimal specific training for that situation to base his treatment plan on.

Previous efforts to meet the needs of EMS providers working in the wilderness have not experienced broad-based success and acceptance due to a variety of reasons. Primarily, these efforts were not coordinated on a national basis, often did not fit into the EMS system or lacked national level support from providers, physicians and EMS agencies.

If any new wilderness or delayed / prolonged transport medical programs are to be effective in EMS, they must meet the following criteria:

- training modules that fit into the ***current licensing structure*** of the EMS system
- instruction in ***standards of clinical practice*** that represent a consensus of medical experts
- standardized ***curriculum*** that is the result of a due process of field testing, review, approval and quality control
- ***instructors*** that are experienced, certified and supervised
- ***certification*** that is widely recognized and is accepted as a meaningful verification of high training standards

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NASAR WILDERNESS MEDICINE PROGRAMS

The National Association for Search and Rescue (NASAR) has developed a series of training programs for the EMS provider working in the wilderness context of delayed / prolonged transport . The NASAR **Wilderness EMT (WEMT)** training series and NASAR **Wilderness First Responder (WFR)** program meet all of the criteria for quality EMS training programs. They provide a reasonable and effective solution to the past problems of wilderness EMS.

NASAR Medical Programs are Continuing Education modules which are added to EMS training and certification at all levels. The NASAR series parallels the model of PHTLS, ACLS and similar Continuing Education programs in EMS.

- Medical treatment in the ***ambulance context*** is presented in a DOT National Standard Curriculum (First Responder through EMT-Paramedic).

- Medical treatment in the ***specializedwilderness context of delayed / prolonged transportc*** as opposed to the conventional context of rapid transport, requires adaptation and modification of some procedures and techniques to fit the conditions at hand. This material is presented in a NASAR Wilderness Medicine curriculum and course syllabus.

Note: NASAR Wilderness Medicine Programs are not designed to define a new level of licensure in EMS. Wilderness and prolonged transport medical training involves modified ***standards*** of practice but does not affect ***scope*** of practice. The administration of IV fluids, for example, requires licensing in most states at the EMT-Intermediate level. Administration of medications and invasive procedures such as cricothyrotomy, require licensing at the EMT-Paramedic level. Advanced procedures require advanced levels of authorization and licensing through the usual EMS system.

WILDERNESS EMT (WEMT) TRAINING SERIES

Continuing Education series

for: • EMT-A (Basic)
• EMT-Intermediate
• EMT-Paramedic

CE MODULES

• WEMT Module 1	18 hours	General Medicine
• WEMT Module 2	16 hours	Trauma
• WEMT Module 3	9 hours	Environmental Medicine
• WEMT Module 4	13 hours	Wilderness Rescue

PREREQUISITE

• Certification of previous training at EMT- A (Basic) level or above

CERTIFICATION

• Each WEMT module is certified by NASAR and is eligible for State and NREMT Continuing Education credit
• Wilderness EMT certification from NASAR for EMT's who complete all four WEMT modules within one year.
[Wilderness EMT = EMT (any level) + WEMT Modules 1 - 4]

SUPPLEMENTAL PROGRAMS

• Instructor Training	32 hours
• WEMT review course	16 hours
• EMS Physician and Prolonged Transport	16 hours

WILDERNESS FIRST RESPONDER (WFR)

Complete basic training program

COMPONENTS
- DOT National Standard First Responder
- NASAR First Responder Wilderness Module
- CPR certification

PREREQUISITE
- No previous certification is required

CERTIFICATION
- CPR certification from AHA or ARC
- First Responder certification from NASAR (DOT National Standard curriculum)
- Wilderness First Responder certification from NASAR is given to individuals completing all three components of the basic training program

SUPPLEMENTAL PROGRAMS

• Instructor Training	32 hours
• WFR review course	16 hours

CURRICULUM

NASAR Wilderness Medicine programs represent a nationally standardized core curriculum series. Course content and design have been developed from prototype programs operated since 1984. They are the result of input from educators, medical experts, search and rescue personnel, EMS administrators and field providers, and over 850 students who participated in prototype courses. Specific course components include:

PATIENT ASSESSMENT
- systems and techniques for delayed /prolonged transport

BODY SYSTEMS
- review of the mechanisms of illness and injury
- anticipated problems during prolonged transport
- modified treatment procedures for the wilderness context

MEDICAL / RESCUE EQUIPMENT
- use of IV fluids, MAST, oxygen, airways and respiratory equipment in extreme environments (WEMT)
- litters and splints - principles and techniques of improvisation

TRAUMA
- principles of injury and application in the wilderness context
- modified techniques for treatment of fractures and dislocations
- managing the injured spine during prolonged transport in difficult environments
- wound management in the wilderness

ENVIRONMENTAL MEDICINE
- hypothermia and hyperthermia
- near - drowning
- frostbite and cold injuries
- altitude and diving medicine
- lightning injuries
- sun exposure

WILDERNESS TOXINS
- snakebite, marine toxins, insect bites and stings, plants and other common wilderness toxins

BACKCOUNTRY MEDICINE
- routine management and prevention of some common medical problems encountered in the wilderness: sprains and strains, diarrhea, seasickness, minor wounds, urinary infections, dental problems, headaches etc.
- first aid kits designed for the backcountry

WILDERNESS RESCUE
- rescue operations - Incident Command System
- personal preparedness
- equipment
- radios
- litters and evacuation
- knots and rope management

Curriculum has been reviewed by the NASAR Education, Technical Rescue and Medical Committees and was formally approved by the NASAR Board of Directors in February 1988. Curriculum continues to be reviewed and approved on a regular basis by NASAR.

CERTIFICATION

Certification is the verification of training and performance and is provided by the National Association for Search and Rescue. NASAR is widely recognized as an authority on search and rescue training. NASAR verifies that the student's training and performance levels meet the requirements specified by a standardized and supervised curriculum. This process parallels the certification of PHTLS by NAEMT, ACLS by the American Heart Association and other similar certifications.

NASAR is committed to a high level of quality assurance in all of its certified training programs. Course curriculum and standards of practice are subject to regular review by NASAR Medical, Education and Technical Rescue Committees. Course records, evaluations and student database are maintained by NASAR for verification of training. A standardized testing format and grading system is used in all courses.

NASAR instructors meet and maintain unusually high standards for medical training, field experience, and teaching skills. Instructor performance is included in all course evaluations. Instructor training, certification and evaluation are under the direct supervision of the NASAR Medical Program Director.

CLINICAL GUIDELINES

Emergency treatment, in the "wilderness" or prolonged transport contexts, requires some modification of concentrated procedures and techniques that have been developed for the rapid-transport ambulance context. Course materials represent reasonable and prudent guidelines that have been developed by medical experts for the specialized wilderness context of delayed / prolonged transport .

Modified clinical guidelines were compiled from a review of currently available and published medical guidelines. This review was originally conducted by Wilderness Medical Associates, a consulting group in Maine. Modified guidelines were reviewed and approved by the Maine Chapter of the American College of Emergency Physicians and the Maine EMS Physician Advisory Board. In 1987 guidelines were reviewed and formally approved by the NASAR Medical Committee.

Modified clinical guidelines continue to be reviewed and developed further by a consensus process of medical experts. A broad-based review by state and national medical organizations is scheduled for completion by June, 1989.

AUTHORIZATION

EMS defines a clear system of authorization and regulation of clinical procedures and techniques performed by field providers. NASAR is working with individual state EMS agencies to coordinate and develop appropriate mechanisms to authorize EMS providers to utilize procedures and techniques which vary from conventional treatment guidelines. It is assumed that EMS providers will apply modified standards only under the following conditions:

- They are working in a ***wilderness or prolonged transport*** context.
- They have been ***trained*** in these modified procedures and techniques.
- They have been ***authorized*** by the appropriate EMS agency /Medical Control / Physician Supervisor to carry out specific treatment procedures and protocols.